

USSR

UDC: 621.791.019.6

KITSELEV, S.N., GRECHISHKIN, V.I., and RING, I.L., Moscow

"Obtaining High-Quality Weld Joints in Tubes Made of SAV-1 Aluminum Alloy"

Kiev, Avtomaticheskaya Svarka, No 5, May 70, pp 49-50

Abstract: Investigations were made of a technique for obtaining high-quality weld joints in tubes made of SAV-1 aluminum alloy. A dangerous flaws in the welding of tubes made of aluminum alloys are the oxide inclusions in the root of the weld. Correction of defective seams by auxiliary welding does not yield positive results, inasmuch as the porosity of the seams increases considerably. The reason for the formation of oxide inclusions in the root of the weld is the oxidation of the metal during welding. Thus, during the investigations the parts were carefully dressed. It was decided that the metal in the maximum heating zone could best be protected by two means: blowing shielding gas into the tube and direct protection of the joint against oxidation. In the first case, before welding, a choke was inserted inside the tube at a distance of 100-200 mm from the weld. The hollow was filled with an approximately fivefold volume of protective gas (argon) blown through it. To compensate for gas leakage in the joint and connecting-piece ends, 5-10 liter/minute was continuously blown into the tube hollow. For welding with blowing of the protective gas directly into the weld-metal zone, a centering device was prepared with a hollow in the backing ring, from which the protective gas was fed

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KISELEV, S.N., et al., Avtomaticheskaya Svarka, No 5, May 70, pp 49-50

through an 0.8 mm diameter hole. A radial groove 1.0 mm deep and 8 mm wide was made on the ring (its dimensions were increased to obtain greater reinforcement of the root of the weld); after welding, the root of the weld was examined to a height of 0.2-0.4 mm. The use of a deep groove with subsequent machining of the root of the weld increased the probability of obtaining defect-free welds. Argon consumption in welding by this method is 3-4 times less than in blowing the tube hollow with argon. External examination and x-ray and metallographic control of weld joints performed with supplementary protection of joints by blowing argon through the centering device showed the absence of nonfusion-type defects in the seams.

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1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--A TWO FREQUENCY METHOD FOR CONTROLLING QUADRUPOLE RELAXATION -U-  
AUTHOR--(04)-AYNBINDER, N.YE., GRECHISHKIN, V.S., OSIPENKO, A.N., SHISHKIN,  
YE.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 53,  
NR 5, PP 1543-1548  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR ENERGY LEVEL, QUADRUPOLE MOMENT, EXCITATION ENERGY,  
SPIN LATTICE RELAXATION, RELAXATION PROCESS, RF FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0010

STEP NO--UR/0056/70/058/005/1543/1548

CIRC ACCESSION NO--AP0127660

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0127660  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NUMBER OF NOVEL PHYSICAL EFFECTS WHICH APPEAR ON EXCITATION OF NUCLEAR QUADRUPOLE ENERGY LEVELS WITH TWO FREQUENCIES ARE DESCRIBED. IT IS SHOWN THAT BY INTRODUCING A SATURATING POWER IN TO THE ADJACENT TRANSITION ONE CAN CONTROL SPIN LATTICE RELAXATION. THE METHOD CAN BE EMPLOYED FOR DETERMINING THE RATION OF THE RELAXATION PROBABILITIES AND THE MAGNITUDE OF THE RADIO FREQUENCY FIELD IN A SATURATING PULSE. FACILITY: PERMSKIY GOSUDARSTVENNYY UNIVERSITET IM. A. M. GOR'KOGO.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SPIN SPIN AND SPIN LATTICE RELAXATIONS IN COMPLEXES BASED ON  
ANTIMONY TRICHLORIDE AND ANTIMONY TRIBROMIDE -U-  
AUTHOR--(03)-GRECHISHKIN, V.S., GUSHCHIN, S.I., SHISHKIN, V.A.

CCOUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 145-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPIN LATTICE RELAXATION, BROMINE ISOTOPE, CHLORINE ISOTOPE,  
COMPLEX COMPOUND, NUCLEAR RESONANCE, RAMAN SPECTRUM, ANTIMONY ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1234

STEP NO--UR/0192/70/011/001/0145/0148

CIRC ACCESSION NO--4P0116696

UNCLASSIFIED

2/2 015  
CIRC ACCESSION NO--AP0116696 UNCLASSIFIED PROCESSING DATE--30OCT70  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING COMPLEXES OF BR AND  
CL ISOTOPES WERE STUDIED BY MEANS OF NUCLEAR QUADRUPOLE RESONANCE  
(17-180 MHZ) AND BY RAMAN SPECTROSCOPY: ALPHA-SBBR SUB3, 2SB8R SUB3.-C  
SUB6 H SUB6, 2SB8R SUB3.PH SUB2 CH SUB2, SBBR SUB3.PHOME, 2SBCL SUB3.PH  
SUB2 CH SUB2. SIGNALS OF SPIN QUADRUPOLE ECHO WERE OBSD. IN NUCLEI OF  
PRIME35 CL, PRIME79 BR, PRIME81 BR, PRIME121 SB, AND PRIME123 SB. IN  
THE CASE OF BR ISOTOPES, QUADRUPOLE RELAXATION INFLUENCES BOTH T SUB1  
AND T SUB2. AT 292DEGREESK T SUB1 SIMILAR TO T SUB2. FACILITY:  
PERM. GOS. UNIV. IM. GOR'KOGO, PERM, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--MECHANISM OF THE ACTION OF SALTS DURING THE SYNTHESIS OF AROMATIC  
POLYAMIDES IN AMIDE SALT SYSTEMS -U-  
AUTHOR--(04)--FEDOROV, A.A., SUKOLIN, L.B., ZLATOGORSKIY, M.L., GRECHISIKIN,  
V.S.  
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. B 1970, 12(3), 205-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, POLYAMIDE COMPOUND, MOLECULAR WEIGHT, NMR,  
LITHIUM COMPOUND, MAGNESIUM CHLORIDE, ALUMINUM CHLORIDE, ZINC CHLORIDE,  
STRONTIUM CHLORIDE, CADMIUM CHLORIDE, ELECTRONEGATIVITY, AMIDE, HYDROGEN  
BONDING, PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/0316

STEP NO--UR/0460/70/012/003/0205/0208

CIRC ACCESSION NO--AP0111510

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111510

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE INTERACTIONS OF THE METAL SALTS LiCl, LiBr, LiI, LiNO<sub>3</sub>, LiSCN, MgCl<sub>2</sub>, AlCl<sub>3</sub>, SrCl<sub>2</sub>, ZnCl<sub>2</sub>, AND CdCl<sub>2</sub> AND HCl WITH BENZAMIDE (I) IN ACNMF SUB2 SOLNS. AND THE INFLUENCE OF THE SALTS ON THE MOL. WT. OF POLY(P,PHENYLENETEREPTHALAMIDE) (II) SYNTHESIZED IN ACNMF SUB2 SOLNS. WERE STUDIED BY A HIGH RESOLUTION NMR METHOD. CHEM. SHIFT INCREMENTS OF I AMIDE PROTONS DECREASED IN THE ORDER OF DECREASING ELECTRONEGATIVITY OF THE LI SALT ANIONS TO 0 AND THEN INCREASED IN THE ORDER OF INCREASING ELECTRONEGATIVITY OF THE CATIONS OF THE OTHER SALTS. DECREASES IN I SOLY. FOLLOWED THE SAME ORDER OF DECREASING LI SALT ANION ELECTRONEGATIVITY. APPARENTLY, THE STRONGER THE H BONDS BETWEEN SALT ANIONS AND AMIDE GROUP PROTONS, THE GREATER IS I SOLY. AND THE FARTHER DOWNFIELD THE AMIDE PROTON SIGNAL. THE SIZE OF THE CHEM. SHIFT OF THE AMIDE PROTONS CAUSED BY DIFFERENT SALTS INCREASED LINEARLY WITH INCREASING MOL. WT. OF II SYNTHESIZED IN ACNMF SUB2 IN THE PRESENCE OF THESE SALTS. PRESUMABLY, INCREASED INTERACTION BETWEEN SOLVENT AND POLYMER PROMOTED HIGHER MOL. WTS.

UNCLASSIFIED



1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SYNTHESIS OF STRUCTURALLY REGULAR POLYPEPTIDES CONTAINING ALANINE  
AND N-PRIME EPSILON BENZOXYCARBOXYLLYSINE -U-  
AUTHOR--(04)-POROSHIN, K.T., MARYASH, L.I., GRECHISHKO, V.S., SHIDNEV, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKADE. NAUK TADZH. SSR 1970, 13(4), 19-21  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PEPTIDE, ALANINE, ORGANIC SYNTHESIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REL/FRAME--3002/1302 STEP NO--UR/0425/70/013/004/0013/0021  
CIRC ACCESSION NO--AT0128/16  
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AT0129716  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. N PRIME EPSILON -TOSYL GROUP USED  
EARLIER (CA68, 30013C) WAS REPLACED BY AN N PRIME EPSILON  
-BENZOXYCARBONYL GROUP (CBZ), WHICH CAN BE REMOVED FROM THE PEPTIDE  
UNDER MORE GENTLE CONDITIONS. SYNTHESIS OF STARTING MONOMERS WAS  
CARRIED OUT BY THE METHOD OF MIXED ANHYDRIDES. FACILITY: INST.  
KHIM., DUSHANBE, USSR.

UNCLASSIFIED

USSR

UDC 542.91:547.1'118

GRECHKIN, N. P., and GRISHINA, L. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Ethyleniminocarbinols With Some Derivatives of Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 73, pp 1883-1884

Abstract: The reaction of  $\alpha$ -ethyleniminocarbinols with some phosphorus derivatives was investigated. Reacting  $\beta$ -trichloro- $\alpha$ -ethyleniminoethanol with dialkylphosphorous and glycolphosphorous acid chlorides yielded  $\beta$ -trichloro- $\alpha$ -ethyleniminoethyl esters of the respective acids.

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USSR

UDC 542.91:547.1'118

GRECHKIN, N. P., and GRISHINA, L. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR Kazan'

"Pyrrolidides of Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 73, pp 1670-1671

Abstract: Research on organophosphorus derivatives of pyrrolidine with the purpose of synthesizing physiologically active compounds was continued. By reacting 2-chloro-1,3,2-dioxaphospholanes and -phosphorinanes with pyrrolidine in the presence of  $\text{Et}_3\text{N}$ , 2-pyrrolidido-1,3,2-dioxaphospholanes and -phosphorinanes were obtained. The reaction of these compounds with chloralhydrate was accompanied by opening of the P-containing ring and a Perkov rearrangement. As a result, formation of chloroalkyl di-beta, beta-chlorovinyl N-pyrrolididophosphates took place. The pyrrolididophosphates had antifungal activity towards dermatophytes. The physical properties of the compounds prepared are listed in tables.

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UDC 542.91.661.718.1

NURETDINOV, I. A., NIKONOROVA, L. K., LOGINOVA, E. I., and GRECHKIN, N. P.,  
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy  
of Sciences USSR

"Amidoesters of Selenophosphoric Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71,  
pp 2095-2097

Abstract: For purposes of studying the effect of the amide and ester group structure on the physical and biological properties of alkylselenophosphoric acid amides, the authors synthesized a series of new amidoesters of selenophosphoric acid by the addition of elemental selenium to corresponding tervalent phosphorus acid amides. The NMR- $P^{31}$  and IR spectra of the resultant compounds were studied. It was found that the electron effects of the phosphorus substituents in amidoesters of selenophosphoric acid have little influence on the shielding of the phosphorus nucleus. A separate article will report the results of a study of insecticidal and fungicidal properties of the compounds.

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USSR

UDC 542.91+661.718.1

GRECHKIN, N. P., and GRISHINA, L. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences, USSR

"Phosphonaminoethylation of Spirophosphoranes"

Moscow, Izvestiya Akademii Nauk, Seriya Khimicheskaya, No 7, Jul 70, pp 1644-1646

Abstract: A mixture of 3 g of 1,4,6,9-tetraoxa-5-phosphaspiro-(4,4)-nonane, 4.6 g ethyleneamine of diisobutylphosphoric acid and about 0.1 g of ammonium chloride was heated in a sealed tube at 120-170° for 18 hrs to yield after distillation 5-(N-β-diisobutylphosphonamino)-ethyl-1,4,6,9-tetraoxa-5-phosphaspiro-(4,4)-nonane, b.p. 143-146°/0.1mm  $d_4^{20}$  1.1508,  $n_D^{20}$  1.4580. Following alkyl analogues were obtained similarly: alkyl derivative, b.p. °C/mm Hg,  $d_4^{20}$ ,  $n_D^{20}$  given: n-propyl, 125-126/0.3, 1.2015, 1.4560; i-propyl, 146-147/0.3, 1.1731, 1.4625; n-butyl, 133-135/0.4, 1.1564, 1.4572; and i-pentyl, 182-184/0.6, 1.1322, 1.4620.

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UDC 542.91 + 661.718.1

NURETDINOV, I. A., BUINA, N. A., GRECHKIN, N. P., and LOGINOVA, E. I.,  
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy  
of Sciences USSR

"Diphenyl- and Phenyl-diethylamidosenophosphoric Acid Esters"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71,  
pp 131-136

Abstract: A series of alkyl esters of diphenyl- and phenyl-diethylamido-  
selenophosphoric acid was synthesized. Selenium was added to ethyl diphenyl  
phosphite and after the initial exothermic reaction subsided, the mixture was  
heated for 1 hr at 100°, filtered and distilled under vacuum yielding ethyl  
diphenyl selenophosphate (I), b.p. 133-134°/0.02 mm,  $d_4^{20}$  1.3709,  $n_D^{20}$  1.5705.  
(I) was also obtained from the reaction of diphenyl selenochlorophosphate  
with  $(C_2H_5)_3N$  and ethanol in benzene at 10-15°. The solid  $(C_2H_5)_3N \cdot HCl$   
formed was removed by filtration and (I) distilled in vacuum; both methods  
gave the identical product. Following compounds were obtained by the second  
reaction: ethyl phenyl diethylamidosenophosphate, b. p. 109-111°/0.001 mm,  
 $d_4^{20}$  1.2707,  $n_D^{20}$  1.5389; propyl diphenyl amidosenophosphate, b.p. 141-143°/

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NURETDINOV, I. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 131-136

/0.002mm,  $d_4^{20}$  1.3354,  $n_D^{20}$  1.5703; and propyl phenyl diethylamidosenophosphate, b.p. 120-120.5°/0.001 mm,  $d_4^{20}$  1.2423,  $n_D^{20}$  1.5368. It was determined that methyl esters of diphenyl- and phenyldiethylamidosenophosphoric acids obtained analogously to the ethyl esters isomerize on heating to methyl-selenium esters of respective phosphoric acids.

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USSR

N UDC 542.91 + 538.113 + 661.718.1

NURETDINOV, I. A., LOGINOVA, E. I., NIKONOROVA, J. K., and GRECHKIN, N. P., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan, Academy of Sciences USSR

"Synthesis and NMR Spectra of Compounds Containing the :P(S)-N-P: Group"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 70, pp 914-916

Abstract: Mixed amides of dimethylthiophosphoric acid and trivalent phosphorus acids were obtained by reacting the methanamide of dimethylphosphoric acid with trivalent phosphoric acid chloride in the presence of triethylamine or by the reaction of N-dimethylthiophosphane-N-dichlorophosphine-N-methylamine with the dimethylamine in ether solution. Since the two phosphorus atoms are not equivalent -- PIV-N-PIII -- their respective signals were found to be split in doublets. Chemical shifts of the nuclei of tetracoordinated phosphorus are not affected by substituents on the tricoordinated P,

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NUFETDINOV, I. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 70, pp 914-916

while the shifts of nuclei on tricoordinated P behave analogously to monophosphoric compounds. The constants of spin-spin interaction  $J_{pp}$  depend on the electron donating power of the substituents on tricoordinated phosphorus.

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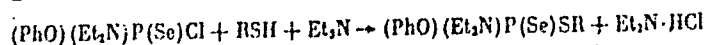
UDC: 542.91-661.718.1

NURETDINOV, I.A., BUTINA, N.A., GRECHKIN, N.P., LOGINOVA, E.I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

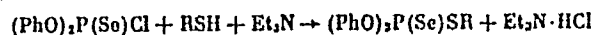
"Thiol Esters of Selenophosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, Mar 70, pp 708-710

Abstract: Phenyl-diethylamido-selenochlorophosphate reacts with mercaptans and thiophenol in the presence of triethylamine to produce the corresponding thiol esters.



The ethyl- and butylthiol esters of phenyl-diethylamido-selenophosphoric acid are liquids, while the phenylthiol ester of this acid is a crystalline substance. Thiol esters of diphenylselenophosphoric acid are produced by a similar reaction.



The resultant products have a considerably higher boiling point than thiol esters of phenyl-diethylamido-selenophosphoric acid. The properties of eight esters of selenophosphorus acids are tabulated.

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--THIOL ESTERS OF SELENOPHOSPHORIC ACIDS -U-  
AUTHOR--(04)-NURETDINOV, I.A., BUINA, N.A., GRECHKIN, N.P., LOGINOVA, E.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 708-10  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THIOL, ORGANIC PHOSPHORUS COMPOUND, ORGANOSELENIUM COMPOUND,  
TRIETHYLAMINE, NMR SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1780 STEP NO--UR/0062/70/000/003/0708/0710  
CIRC ACCESSION NO--AP0123577  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF 3 G ETSN AND 4.9 G ED  
SUB3 N IN C SUB6 H SUB6 WITH 15 G PHOP (SE) (NET SUB2) CL, FINALLY 1.2  
HR AT 35DEGREES, GAVE 63.4PERCENT PHOP (SE) (NET SUB2) SET, B SUB0.001  
121-3DEGREES, D PRIME20 1.3011, N PRIME20 SUBD 1.5840; SIMILARLY WERE  
PREPD. THE ANALOGS. 65.8PERCENT BUS, B SUB0.001 140 MINUS 1PERCENT,  
1.2468, 1.5710; AND 53.8PERCENT PHS, M. 32-3DEGREES. EXCESS ETSNA IN  
ET SUB2 O TREATED WITH (PHO) SUB2 P (SE) CL GAVE AFTER REFLUXING 5 HR  
30PERCENT (PHO) SUB2 P (SE) SET, B SUB0.005 152-3DEGREES, 1.3986,  
1.6223; SIMILAR REACTION WITH STOICHIOMETRIC RATIO OF REACTANTS AND RUN  
IN C SUB6 H SUB6 2 HR AT 13-20DEGREES GAVE 37PERCENT SIMILAR PRODUCT, B  
SUB0.002 146-7DEGREES, 1.3874, 1.6125. BOTH HAD SIMILAR NMR SPECTRA.  
REACTION OF (PHO) SUB2 P (SE) CL WITH RSH AND ET SUB3 N GAVE (PHO) SUB2  
P (SE) SR (R SHOWN): 71.6PERCENT ET, B SUB0.002 144-6DEGREES, 1.3876,  
1.6180; 72.3PERCENT BU, B SUB0.001 151-2DEGREES, 1.3347, 1.6050;  
58.2PERCENT PH, AND B SUB0.002 166-7DEGREES, 1.3744, 1.6490. THESE HAD  
PHYS. CONSTS. VERY DIFFERENT FROM THOSE REPORTED PREVIOUSLY BY N. I.  
ZEMLYANSKII ET AL. (1965, 1967); THOSE COMPS. MAY HAVE BEEN PRODUCTS  
OF REACTION OF THESE WITH EXCESS RSNA. FACILITY: INST. ORG.  
FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ACOUSTIC PROPERTIES OF AZETROPIC MIXTURES -U-  
AUTHOR--(03)-GRECHKIN, V.I., NOVIKOV, G.I., NOZDREV, V.F.  
COUNTRY OF INFO--USSR  
SOURCE--AKUST. ZH. 1970, 16(1), 145-7  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--ACOUSTIC PROPERTY, AZETROPIC MIXTURE, POPANOL, CYCLOHEXANOL,  
ULTRASONIC VELOCITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2040 STEP NO--UR/0046/70/016/001/0145/0147  
CIRC ACCESSION NO--AP0125628  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO SVETOSLAVSKI, THE AZEOTROPIC PHENOMENON IS DUE TO THE DIMINISHED INTERACTION BETWEEN THE HETEROGENEOUS MOLS. COMPARED TO THAT BETWEEN THE MOLS. OF THE SAME KIND.

IT COULD BE SUPPOSED THAT THE HETEROGENEITY OF MOLS. WILL INFLUENCE IN AN ANALOGOUS WAY THE PHYS. PROPERTIES. THE VELOCITY OF THE PROPAGATION OF THE ULTRASOUND AND THE SHIFT VISCOSITY IN THE LIQ. PHASE OF THE ISO,PROH,CYCLOHEXANOL SYSTEM WERE MEASURED WITH THE AIM TO CHECK THIS SUPPOSITION; THE MIN. VALUES OF THESE PHYS. PROPERTIES CORRESPOND TO THE VARIATIONS OF THE COMPN. OF THE AZEOTROPE MIXTS. THE PROFOUND CORRELATION BETWEEN THE PHYS. PROPERTIES AND AZEOTROPISM WAS THUS PROVED. FACILITY: TUL. GOS. PEDAGOG. INST. IM. TOLSTOGO, TULA, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--DETERMINATION OF THE COMPOSITION OF AN ISOPROPANOL CYCLOHEXANE  
AZETROPIC SYSTEM IN A WIDE TEMPERATURE RANGE NEAR THE CRITICAL  
AUTHOR--(03)-NOZDREV, V.F., GRECHKIN, V.I., NOVIKOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 819-20

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PROPANOL, CYCLOHEXANE, AZETROPE, PHASE EQUILIBRIUM, VAPOR  
PRESSURE, FLUID VISCOSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1198

STEP NO--UR/0076/70/044/003/0819/0520

CIRC ACCESSION NO--AP0128616

UNCLASSIFIED



2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128616

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE AZEOTROPISM OF ISO,PROH,CYCLOHEXANE MIXTS. WAS INVESTIGATED AT VARIOUS COMPONENT RATIOS, VAPOR PRESSURES, AND TEMPS. UP TO THE CRIT. TEMP. THE PHASE EQUIL. WERE DETD. REFRACTOMETRICALLY, THE ULTRASONIC PROPAGATION RATE  $\rho$  BY THE OPTICAL DIFFRACTIONAL METHOD, THE VISCOSITY  $\eta$  IN CAPILLARY VISCOMETER, AND THE  $D$ . IN SEALED AMPULS. AZEOTROPIC MIXTS. ARE FORMED IN THE SYSTEMS, THE AZEOTROPE COMPN. CHANGING WITH TEMP. THE ISO,PROH CONTENT IN THE AZEOTROPE INCREASES WITH TEMP. RISE TO A MAX. VALUE 80 WT. PERCENT NEAR THE CRIT. TEMP.;  $\eta$  OR  $\rho$  AND  $D$  ARE MIN. AT CONC. RATIOS FOR WHICH THE INTERACTIONS BETWEEN THE COMPONENTS ARE WEAKEST. FACILITY: TUL. GCS. PEDAGOG. INST. IM.TOLSTOGO, TULA, USSR.

UNCLASSIFIED

USSR

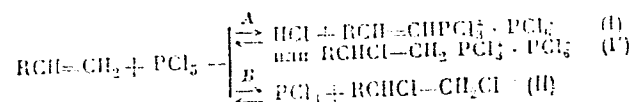
UDC 547.341

RYBKINA, V. V., ROZINOV, V. G., and GRECHIN, YE. F.

"Effect of Aprotic Solvents on Phosphorylating Properties of Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 62-66

Abstract: On interaction of phosphorus pentachloride with olefins, primarily two types of compounds are formed: the phosphorylation products (I) [K. N. Anisimov, et al., Izv. AN SSR, OtkhN, 610, 1954] or (I') [V. V. Ponomarev, et al., Kremniyorganicheskiy sovedineniya, trudy soveshchaniya, Moscow, 63, 1966] and chlorination products (II) [D. P. Wyman, et al., J. Org. Chem., No 28, 882, 1969]. This is represented as follows:



The chlorides (II) is the product of the independent reaction B and not decomposition of the phosphorus-containing derivatives (I) or (I'). The latter are stable in the solution in the presence of moderate heating, and the chlorinated products are formed always even under mild conditions at room temperature. A further study was made of the phosphorylation reactions

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USSR

RYBKINA, V. V., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 62-66

by phosphorylation of styrene by phosphorus pentachloride in a number of aprotic solvents. This reaction is facilitated in the nonionizing aprotic solvents. The phosphorylation product yield increases significantly when the reaction is performed in the presence of phosphorus trichloride. This is connected with suppression of the side reaction of the chlorination of styrene. Photocolorimetric analysis confirmed the formation of the  $PCl_5 \cdot L$  complexes with electron donor aromatic ligands. The color of the phosphorus pentachloride solution in the solvents -- benzene derivatives -- arises from analog complex formation.

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USSR

UDC 546.185

ROZINOV, V. G., RUBKINA, V. V., and GRECHKIN, Ye. F., Institute of the State University imeni A. A. Zhdanova and Institute of Petroleum and Carbon-Chemistry Synthesis at the Irkut State University

"Molecular Complexes of Phosphorous Pentachloride With Electron-Donor Aromatic Compounds"

Leningrad, Zhurnal Obschey Khimii, Vol 42(104), Vyp 5, 1972, pp 1167-1168

Abstract: The complexes of  $PCl_5$  with compounds of the form  $p\text{-MeOC}_6\text{H}_4\text{X}$  where  $X = \text{H, Me, OMe}$ ; and  $\text{C}_{10}\text{H}_7\text{Y}$ , where  $Y = \text{H}$  and  $\alpha\text{-OMe}$  were studied photometrically in a dichloroethane solvent. Analogous complexes of the form  $PCl_5 \cdot L$  are undoubtedly formed where  $L$  is  $\text{C}_6\text{H}_5\text{X}$ , where  $X = \text{H}$  and  $\text{OEt}$ ;  $\text{MeC}_6\text{H}_4\text{Y}$ , where  $Y = \text{H}$ ;  $o\text{-}$ ,  $m\text{-}$ , and  $p\text{-Me}$ ; and  $o\text{-}$  and  $m\text{-OMe}$ ;  $\text{MeO}_6\text{H}_4\text{Z}$  where  $Z = o\text{-}$  and  $m\text{-OMe}$ , and  $p\text{-Br}$ ;  $\text{C}_{10}\text{H}_7\text{OMe}-\beta$ : anthracene: and stilbene. Colors of the complex solutions range from greenish-yellow to orange. Solutions of  $PCl_5$  in neutral and electron-acceptor solvents are colorless, indicating the absence of molecular complexes.

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USSR

UDC 547.341

TIMOKHIN, B. V., GRECHKIN, Ye. F., TRAN'KOVA, N. A., and YAKUTINA, O. A.,  
Irkutsk State University imeni A. A. Zhdanov

"Reaction of Organic Derivatives of Phosphorus Pentachloride with Grignard  
Reagents"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 103-105

Abstract: Previous work by the authors showed that phenyltetrachlorophosphorane reacts with phenylmagnesium bromide in a 1:3 ratio to give triphenylphosphine. The authors undertook to ascertain the synthetic possibilities of this reaction and to find how the tertiary phosphine yield is affected by the nature of the organic radical in the Grignard reagent. It was found that phenyltetrachlorophosphorane, when participating in a reaction with a Grignard reagent which has alkyl radicals, is reduced to give trivalent phosphorus compounds. The yield of tertiary phenyldialkylphosphines is considerably lower than the yield of triphenylphosphine obtained by the analogous reaction and shows a regular decline with an increase in the volume of the substituent at the phosphorus atom. An exception is phenyldiisobutylphosphine, whose yield is considerably higher. The lower yield of phenyldialkylphosphines is apparently

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USSR

TIMOKHIN, B. V., et al., Zhurnal. Obshchey Khimii, Vol 41, No 1, Jan 71, pp 103-105

due to the possible formation of phosphonium salts, as well as the formation of tertiary phosphine oxides as a result of reduced oxidizing capacity. Styryltetrachlorophosphorane likewise reacts with Grignard reagents to form tertiary styrylphosphines.

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USSR

UDC 547.558.1

TIMOKHIN, B. V., GRECHKIN, YE. F., KALABINA, A. V., Irkutsk State University imeni A. A. Zhdanov, Irkutsk, Ministry of Higher and Secondary Specialized Education RSFSR

"Reaction of Internal Triphenylphosphoniumoxopentachlorophosphate With Grignard Reagents"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2133-2134

Abstract: When internal triphenylphosphoniumoxopentachlorophosphate (I) was reacted with phenylmagnesium bromide (II) at a ratio of 1:1 or 1:2, the only product obtained was triphenylphosphine oxide. When the ratio of (I) to (II) was increased to 1:5, triphenylphosphine was formed, showing that (I) is reduced to the trivalent phosphorus in this process.

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1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--INTERACTION OF STRUCTURAL GROUPS IN MOLECULES CONTAINING A  
PHOSPHORUS ATOM AT THE DOUBLE BOND -U-  
AUTHOR--(05)-RATOVSKIY, G.V., DOROKHOVA, V.V., FROLOV, YU.L., GRECHKIN,  
YE.F., KALABINA, A.V.  
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1124-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, ORGANIC PHOSPHORUS COMPOUND, MOLECULAR ORBITAL,  
ELECTRON CLOUD, CHLORINE, EXCITATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1995/1591

STEP NO--UR/0200/70/190/005/1124/1127

CIRC ACCESSION NO--AT0116999

UNCLASSIFIED



2/2 030

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0116999

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRAL DATA WERE TABULATED IN DETAIL FOR ROCH:CHPOCL SUB2 KPCH:CHPCL SUB2, ROCH:CHPSCL SUB2, AND ROCH:CHPO(DRPRIME1) SUB2, AS WELL AS PHCH:CHPCL SUB2, PHCH:CHPOCL SUB2, PHCH:CHPSCL SUB2 AND PHCH:CHP(O)ET SUB2, WHERE R WAS SELECTED FROM ET, BU, PH OR P-BRC SUB6 H SUB4, AND R PRIME1 EQUALS ET OR BU; ALSO INCLUDED WAS PHOCH:CBKPSCL SUB2. FROM THESE DATA THE COMPARISON MADE WITH THE CALCD. MO ENERGY LEVELS OF MEPI(O)CL SUB2, CH SUB2:CHPOLC SUB2, AND MEOCH:CHPOCL SUB2 SHOWED THE CLEARLY POLAR NATURE OF BOTH THE P(O) AND THE P(CL) BONDS IN THESE COMPODS. THE D ORBITALS OF CL AND P TAKE ALMOST NO PART IN FORMATION OF THE MOLECULAR ORBITALS OF THE OCCUPIED CATEGORIES, BUT THEY DO DET. THE NATURE OF THE RELATIVELY LOW 2, 4 AND 11 VACANT ORBITALS OF THESE MOLS. AS A RESULT THESE MOLS. CAN BE EXPECTED TO SHOW ENHANCED ELECTRONIC POLARIZABILITY AND LOW EXCITATION ENERGIES. THUS, THE PRESENCE OF A POCL SUB2 GROUP AFFECTS THE POLARIZABILITY OF THE ELECTRON CLOUD OF THE DOUBLE BOND, WHILE ALTERATION IN THE DISTRIBUTION OF THE LATTER AFFECTS THE PROPERTIES OF THE P CONTG. GROUPING, WITH SOME PARTICIPATION OF THE CL ATOMS IN THIS PROCESS.

FACILITY: IRKUTSK. GOS. UNIV., IRKUTSK, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--REACTION OF PHENYL TETRACHLOROPHOSPHORANE WITH PHENYL MAGNESIUM  
BROMIDE -U-  
AUTHOR-(02)-TIMOKHIN, B.V., GRECHKIN, YE.F.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 497-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, ORGANOMAGNESIUM COMPOUND,  
CHLORINATED ORGANIC COMPOUND, CHEMICAL REDUCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1985/1391 STEP NO--UR/0079/70/040/002/0497/0498  
CIRC ACCESSION NO--AP0101485  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--19SEP70

CIRC ACCESSION NO--AP0101485

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF 3 MOLES PHMGBR WITH 1 MOLE PHPCL SUB4 RESULTED, AFTER AN AQ. TREATMENT, IN 81PERCENT PH SUB3 P; EVIDENTLY THE 2 STEP FORMATION OF PH SUB3 PCL SUB2 WAS FOLLOWED BY REACTION WITH THE 3RD MOLE OF PHMGBR, WHICH RESULTED IN A REDN. TO PH SUB3 P. THIS AGREES WITH THE WORK BY D. DENNEY AND F. GROSS (1967) SHOWING FORMATION OF PH SUB3 P FROM EQUIMOLAR AMTS. PHMGBR AND PH SUB3 PCL SUB2. REACTION OF 2 MOLES PHMGBR WITH 1 MOLE PHPCL SUB4 GAVE AFTER HYDROLYSIS 65PERCENT PH SUB3 PO, CONFIRMING THE ABOVE HYPOTHESIS.

UNCLASSIFIED

USSR

UDC: 547.341

ROZINOV, V.G., MIKHNEVICH, V.V., and GRECHKIN, YE.F., Irkutsk State University  
imeni A. A. Zhdanov, Irkutsk, Ministry of Higher and Secondary Specialized Educa-  
tion RSFSR

"Phosphorylation of Trisubstituted Olefins With Phosphorus Pentachlo-  
ride"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, p 935

Abstract: In a previous article the authors reported that  $\beta$ -disubstituted unsaturated compounds which are considered unphosphorylatable are phosphorylated with phosphorus pentachloride if there are nucleophilic substituents along with the multiple bond and are not phosphorylated if the substituents are electrophilic. In the present article the ideas about activation with nucleophilic substituents in the phosphorylation reaction are extended to trisubstituted olefins. Even such weak electron-donor substituents as the methyl group promote phosphorylation. Previously unknown complex compounds of the type  $\text{MeC(X)=C(Y)PCl}_3^+ \cdot \text{PCl}_6^-$ , where  $\text{X=Me, Ph, p-MeOC}_6\text{H}_4$  given  $\text{Y=Me}$  and

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USSR

ROZINOV, V. G., et al., Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, p 935

X=Me given Y=Ph, were isolated. When one of the methyl groups is replaced by phenyl or even a more nucleophilic anisyl group the olefin is not phosphorylated. Chlorine-containing trisubstituted olefins are not phosphorylated by phosphorus pentachloride. Acid chlorides of tetrasubstituted vinylphosphonic acids  $\text{MeC(X) = C(Y)POCl}_2$  were obtained from the complex compounds.

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- 70 -

USSR

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RATOVSKIY, G. V., DOROKHOVA, V. V., FROLOV, YU. L., GRECHKIN, YE. P., and KALABINA, A. V., Irkutsk State University imeni A. A. Zhdanov, Irkutsk, Ministry of Higher and Secondary Specialized Education RSFSR; Irkutsk Institute of Organic Chemistry, Irkutsk, East Siberian Affiliate, Siberian Department, Academy of Sciences USSR

"Interaction of Structural Groups in Molecules Containing a Phosphorus Atom at a Double Bond"

Moscow, Doklady AN SSSR, Vol 190, No 5, Feb 70, pp 1124-1127

Abstract: The effect of phosphorus containing groups on beta-substituted vinyl esters is manifested by a  $20-30\text{ cm}^{-1}$  shift towards lower frequency of the double bond valence vibration and a 3-4 fold increase in the intensity of  $\nu_{1620}$ . Presence of groups such as  $-\text{PCl}_2$ ,  $-\text{P}(\text{O})\text{Cl}_2$ ,  $-\text{P}(\text{S})\text{Cl}_2$  in vinyl aryl esters affects the characteristics of the phenyl ring, due to the intramolecular interaction of the phosphorus group with  $\pi$ -electrons of the  $\text{C}_6\text{H}_5\text{CH}=\text{CH}-$  radical system. The intensity of the symmetric and antisymmetric vibrations of the  $-\text{PCl}_2$  group changes considerably on interaction with double bonds. Substitution of a phenyl radical for an

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RATOVSKIY, G. V., et al., Doklady AN SSSR, Vol 190, No 5, Feb 70, pp 1124-1127

alkyl radical almost doubles the  $I_{460+490}^{\infty}$  value. Consequently,  $I_{450}^{\infty}$  of the symmetric vibration line of the P-Cl bond in  $-P(S)Cl_2$  increases in a series of butyl, phenyl, p-bromophenyl vinyl esters and in styrenes. The authors conclude that presence of a  $POCl_2$  group should have an effect on the polarizability of  $\pi$ -electron cloud.

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1/2 006 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PHOSPHORYLATION OF TRISUBSTITUTED OLEFINS BY PHOSPHORUS  
PENTACHLORIDE -U-  
AUTHOR-(03)-ROZINOV, V.G., MIKHNEVICH, V.V., GRECHKIN, YE.F.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBHCH. KHIM. 1970, 40(4), 935  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHOSPHORUS CHLORIDE, ALKENE, CHEMICAL SUBSTITUENT, METHYLENE,  
BENZENE DERIVATIVE, CHLORINE, COMPLEX COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1516 STEP NO--UR/0079/70/040/004/0935/0935  
CIRC ACCESSION NO--AP0135177  
UNCLASSIFIED



2/2 006

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135177

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PCL SUB5 REACTS WITH DISUBSTITUTED UNSATD. COMPODS. PROVIDED THAT THERE IS A NUCLEOPHILIC SUBSTITUENT ADJACENT TO THE DOUBLE BOND, AND DOES NOT REACT IF THE SUBSTITUENT IS AN ELECTROPHILIC ONE. IN THE CASE OF TRISUBSTITUTED OLEFINS A SIMILAR ACTIVATION BY NUCLEOPHILIC GROUPS WAS NOTED AND SUCH WEAK GROUPS AS ME WERE EFFECTIVE. THUS WERE ISOLATED SUCH ADDUCTS AS MECX:CYPCL SUB3 PRIME POSITIVE NEGATIVE PCL SUB6 PRIME NEGATIVE WHERE X EQUALS EM, PH, P MEC SUB6 H SUB4, WHILE Y EQUALS ME OR X EQUALS ME AND Y EQUALS PH. ALL WERE COLORLESS SOLIDS WHICH HYDROLYZE WITH EASE. SINCE THE COMPLEXES TENDED TO DECOMP. IN THE REACTION MIXT., THEIR YIELDS WERE NOT HIGH. REPLACING ONE OF THE ME GROUPS BY PH OR BY MEC SUB6 H SUB4 RESULTED IN FAILURE OF THE REACTION AND IT WAS IMPOSSIBLE TO ADD PCL SUB5 TO MECPH:CHPH, PH SUB2 C: CHME, OR P MEC SUB6 H SUB4 CPH:CHME. EVIDENTLY THE STERIC AND ELECTRON ACCEPTOR PROPERTIES COMBINED TO INHIBIT THE REACTION FOR COMPODS. WITH MORE THAN 1 AROMATIC RING. CHLORINATED TRISUBSTITUTED OLEFINS DID NOT ADD PCL SUB5, AND EVEN PHO GROUP FAILED TO CANCEL THE EFFECT OF THE CL ATOMS. THE ABOVE COMPLEXES WERE CONVERTED CONVENTIONALLY INTO CHLORIDES MECX:CYPOCL SUB2 (X EQUALS ME, Y EQUALS PH, B SUB2 130DEGREES, N PRIME20 SUBD 1.5604. FACILITY: IRKUTSK. GOS. UNIV. IM. ZHDANOVA, IRKUTSK, USSR.

UNCLASSIFIED

USSR

UDC: 621.374.5(088.8)

MEL'NICHUK, L. P., GRECHKO, E. N., Institute of Electrodynamics, Academy of Sciences of the USSR

"A Control Pulse Shaper for a Single-Phase Frequency Converter"

USSR Author's Certificate No 264525, filed 2 Feb 68, published 24 Jun 70  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 120272 P)

Translation: This Author's Certificate introduces a control pulse shaper for a single-phase frequency converter. The shaper contains register cells and a master oscillator. For purposes of simplification, the shaper consists of four shift register cells, the first and second cells being triggered from positive half-waves, while the third and fourth are triggered from negative half-waves of the master oscillator voltage.

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USSR

UDC 621.311.153.018.3

GRECHKO, E. N., and MEL'NICHUK, L. P.

"Synthesis of Optimal Filters for Voltage Inverters Made of Controlled Rectifiers"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 24, Kiev, Naukova Dumka Press, 1970, pp 88-91 (from RZh-Elektrotekhnika i Energetika), No 4, Apr 71, Abstract No 4 Ye244)

Translation: The current and voltage transfer functions of a reactive four-terminal network are analyzed with application of the conditions of formation of sinusoidal voltage at the output independently of the magnitude of the load. The value of the optimal transfer coefficient and power on the basic harmonic is obtained. It is demonstrated that the corresponding filter is an L-type network. The schematic solutions of the filters are found with introduction of additional resonance circuits adjusted to the frequencies of the highest harmonics which are largest with respect to amplitude. There are 3 illustrations and a 5-entry bibliography.

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USSR

UDC 621.314.58(088.8)

VOLKOV, I.V., LIPKOVSKIY, K.A., MEL'NICHUK, L.P., GRECHKO, E.N. [In-t elektrodinam. AN USSR--Institute Of Electrodynamics, AS, UkrSSR]

"Frequency Converter"

USSR Author's Certificate No 265256, filed 27 May 68, published 22 June 70  
(From RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B578P)

Translation: A frequency converter with a d-c section includes a single-rectifier [ventil'] series inverter at the output. With the object of improving the energy characteristics and increasing the security between the rectifier [vypryemitel'] and the source of a-c current, a converter of a source of voltage into a source of current (e.g., an inductive-capacitance converter) is included. 2 ill. A.S.

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.USSR

GRECHKO, L. G. et al, Ukrainskiy Fizicheskiy Zhurnal, Vol 16,  
No 11, 1971, pp 1771-1776

wave fluctuations. The present article is essentially a continuation of the earlier article cited, in which the correlation functions for a semiinfinite plasma were found and in which it was shown that the presence of a limit leads to surface electromagnetic wave fluctuations within the frequency limits of  $0 < \omega < \omega_p / \sqrt{2}$ , where  $\omega_p$  is the plasma Langmuir frequency.

2/2

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USSR

UDC 771.531.3

ANDREYANOV, V. V., GRECHKO, L. V., SVIRIDENKO, M. N., and SVIRIDENKO, A. I.,  
Shostka Branch of the State Scientific-Research Institute of Chemical-  
Photographic Design

"A New Color Reversible Film Ts0-T-90L for TV"

Moscow, Tekhnika Kino i Televideniya, No 6, Jun 72, pp 22-25

Abstract: The State Scientific-Research Institute of Chemical-Photographic Design and the Shostka Chemical Combine devised the film for reporting purposes either in artificial lighting or, with special filter, in daylight.

One positive feature of the new film is that when black-white development time is changed, the film shows no light-sensitivity balance among the several layers. In addition, during developing, light sensitivity can be increased and the contrast factor reduced, without any perceptible effect on light transmission.

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USSR

UDC 771.531.37.778.33

BOGDANOV, L. M., GRECHKO, M. K., DONSKAYA, S. A., ZHORRES, V. I.,  
KISLITSYN, V. K., and NEFEDCHENKOV, V. M., Shostinskiy Branch, Gosniikhimfoto-  
proyekt Shostinskiy Chemical Combine

"A New X-Ray Film for Rapid Machine Processing"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii, Vol 18, No 4, 1973, pp 306-  
307

Abstract: The Shostinskiy branch of the Gosniikhimfotoprojekt and the Shostin-  
skiy Chemical Combine completed in 1972 the development of a new medical X-ray  
film, the RM-1 "M" which, in distinction from the series-produced RM-1 medical  
X-ray film, is suitable for rapid machine processing. The specifications of  
this new film are similar to those of the East German Supervidox Roentgen  
Film/x-ray. The emulsion layer of the RM-1 "M" film is thinner than that of  
the RM-1 film, and of the RM-1T film that is being produced in series for  
tropical use; the emulsion layer of the new film is capable of withstanding  
the severe temperature conditions of machine processing. During machine pro-  
cessing, each of the operations of developing, fixing, washing, and drying  
require 45 seconds. The RM-1 "M" film has been tested for machine processing  
with entirely satisfactory results, and is now being produced in series.

2 tables. 2 references.

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USSR

UDC 629.12-52.019.3

GUBINSKIY, A. I., KOBZEV, V. V., GRECHKO, YU. P.

"Study of the Availability of Maritime Automated Control Systems"

Tr. TsNII mor. flota (Works of the Central Scientific Research Institute of the Maritime Fleet), 1971, vyp. 146, pp 3-10 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A634)

Translation: The quantitative reliability criterion -- availability factor -- was obtained for nonredundant, repairable maritime automatic control systems with various functions performed in them by man. The reliability of the complex was investigated as a function of the degree of automation of the control system and the type of human activity in it. The expedient means of improving the reliability of the complex are demonstrated. There are 2 illustrations and a 2-entry bibliography.

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USSR

UDC 621.382.3

GREKHOV, I.V., KONAKOVA, R.V., SHUMAN, V.B.

"Operating Principle of a Multicollector Photothyristor"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 969-970

Abstract: This article contains a discussion of the operating principle of a multicollector photothyristor. The advantages of the multicollector photothyristor over the four-layer photothyristor are discussed. It is pointed out that the photosensitivity of the multicollector structure exceeds the sensitivity of the four-layer photothyristor several times. Curves are presented for the relative sensitivity as a function of depth of the collector p-n junction of the two-collector photothyristor. Current and voltage diagrams are presented for the two-collector photothyristor during the inclusion process. From these diagrams it is obvious that the transient process of inclusion of the multicollector photothyristor is subdivided into two sections: the first represents inclusion of the  $n_1-p_1-n_2-p_2$  structure, and the second, inclusion of the  $n_2-p_2-n_3-p_3$  structure. With an increase in steepness of growth of the light flux or an increase in radiation power from the GaAs of the diode the steepness of the inclusion front increases in both sections. This indicates the increasing magnitude of the capacitive current

time of the structure. The magnitude of the capacitive current can be  
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USSR

GREKHOV, I.V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970,  
pp 969-970

estimated at 100 milliamps on the basis of known values of  $C_2 \approx 200$  picofarads and  $dV/dt \approx 500$  volts/microseconds. This estimate of the capacitive current indicates that its magnitude exceeds that of the minimum inclusion current of the multicollector structure controlled by an electric pulse (on the order of a milliampere for the investigated structures) by several times. Thus, the presence of the  $dV/dt$  effect in the multicollector structure permits an increase in photosensitivity of the multicollector photothyristor by comparison with the four-layer photothyristor. The dependence of the inclusion time of the multicollector structure on the electrophysical and circuit parameters has the same nature as in the n-p-n-p photothyristor.

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USSR

UDC 620.179.2

FEL'DMAN, L. S., BURCHENKOVA, L. M., ORYSHICH, I. V., and GRECHUKHA, A. V.

"Quality Norms for Welded Joints Made by Spot Resistance Welding"

Moscow, Defektoskopiya, No 6, 1970, pp 126-132

Abstract: Results are presented from statistical processing of data from long-term testing of the quality of electric spot welding, as well as the results of fatigue testing of spot welded joints with various welding defects, various depths of fusion, and spot diameters. The fatigue durability of spot welded joints of D16 alloy with fatigue cracks extending over one-third of the diameter of the welded point decreases as a function of stress levels as follows: internal -- 22-73%, external -- 37-80%. Fatigue cracks arise and develop at the periphery of the welded spot in the thermally affected area. The point of formation and development of fatigue cracks is unrelated to defects already present. A change in the depth of fusion at welded joints between 20 and 80% and a change of the welded spot diameter by +30% have no significant influence on the fatigue durability of specimens.

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USSR

UDC 621.791.763.1.05:434.669.715

FEL'DMAN, L. S., Candidate of Technical Sciences, BURCHENKOVA, L. M.,  
ORYSHICH, I. V., and GRECHUKHA, A. V., Engineers

"Effect of Certain Defects During Point Welding of Aluminum Alloys on  
the Fatigue Strength of Joints"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 45-46

Abstract: In order to estimate the effect of point welding defects on the fatigue characteristics of joints welded in D16T alloy, the fatigue strength and viability of welded specimens with defects were measured. Defect types tested included external cracks, internal cracks with length over one-third the diameter of the fused core, internal splashes, and pore penetration. The fatigue strength of point joints of D16T alloy produced by resistance welding was found to be decreased by shrinkage cracks extending over more than one-third the diameter of the welded point. Fatigue cracks are formed and develop around the periphery of the welded spot in the area of heat application. Variations in fusion depth between 20 and 80% and variations in the diameter of the weld nugget by  $\pm 30\%$  had no significant effect on the durability of welded joints.

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USSR

UDC 669.71.053.4(088.8)

BAZHENOV, A. YE., GRECHUKHIN, N. V., OSOKINA, V. K., PAL'CHIKOVA, A. I.,  
PAL'CHIKOVA, T. A., TARASOV, I. A., FEDORTSOV, V. D., CHALIK, A. D.,  
CHERNOV, V. Ye

"Method of Obtaining Cryolite"

USSR Author's Certificate No 312834, filed 3 Mar 70, published 15 Oct 71  
(from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G179P)

Translation: The procedure for obtaining cryolite by roasting the slurry at 700-800° formed as a result of wet removal of the gases in aluminum production is distinguished by the fact that in order to improve the quality of the product, the roasted slurry is subjected to water treatment at 35-40° with a L:S ratio of 5-10: 1 with subsequent leaching out of the precipitate by a 2-10% solution of HF at 55-75° with a L:S ratio of 3-10:1. An example is presented.

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USSR

UDC 669.71.472(088.8)

BALDOVSKIY, L. A., VOLODCHENKO, V. O., GRECHUKHIN, N. V., MELIKYANTS, R. V.,  
MITREYKIN, N. V., and RABINOVICH, B. V.

"Device for Sampling Melted Electrolyte"

USSR Author's Certificate No 271105, Filed 29/11/68, Published 19/08/70  
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract  
No 2 G145 P)

Translation: A device for sampling a melted electrolyte, including a  
spring-mounted perforated cup with a support rod, is presented. To in-  
crease the effectiveness of its operation the outer surface of the cup  
is wrapped with paper and contains a concentrically mounted cylinder,  
equipped with cells mounted on a spiral and fastened to the supporting  
rod by a quick-change joint such as a wedge.

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USSR

UDC: 8.74

GRECHUKHIN, Yu. I.

"Extending the Possibilities of Computers of the 'Nairi' Type"

V sb. Chisl. metody v tekhn. -ekon. zadachakh (Numerical Methods in Technical and Economic Problems--collection of works), Kazan', Kazan' University, 1971, pp 131-137 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V965)

Translation: The paper describes additions which must be made to the "Nairi" computers of the most recent series to enable input of five-track punched tape in "Nairi-1" computer code in addition to six-track punched tape. It is proposed that the M "read" microprogram be supplemented by a new branch for input from five-track code. This branch would also find the tape image of the code and record this image in the cell indicated by the second address of the command being executed. The auxiliary M "read" section is presented as well as the law codes and service key codes for the "Nairi-1" and the inner codes of symbols for input from five-track tape to the "Nairi-1" computer. V. Alekperov.

1/1

- 32 -

USSR

UDC 621.357.8:669.35'5

VALEYEV, A. SH., GRECHUKHINA, T. I., PETROV, G. I.

"Efficient Method of Electrochemical Grinding of Copper and Brass"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 60-62 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L309)

Translation: A method was developed for electrochemical grinding which permits smoothing of the microrelief of the surface formed as a result of machining by a cutting tool, coarse emery or sand with comparatively small removal of metal. The relief 20  $\mu$  high on copper is smoothed by removing ~60  $\mu$  of metal. The same relief on brass is smoothed by removing 100  $\mu$  of metal. With the corresponding removal of metal it is possible to smooth relief up to 40  $\mu$  high and more. The method is based on anode solution in agitated diluted solutions of  $H_2SO_4$  (100-150 g/liter) with  $CuSO_3$  additives (100-150 g/liter) under the conditions of the formation of a film with high resistance on the metal surface. The electrolyte temperature is room temperature,  $D_a$  is 40-50 amps/dm<sup>2</sup>, the voltage on the electrolyzer terminals is 15-18 volts, and the machine time, 10 minutes.

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USSR

UDC 617.741-004.1-02: 543.422.27]-071

GRECHUSHKINA V. A., Candidate of Medical Sciences, Department for the Study of Ocular Trauma, of Restorative Surgery, and of Optic Prosthesis of the Moscow Scientific Research Institute imeni Helmholtz

"Clinical-Morphological and Biochemical Changes in Microwave Cataract in Experiment"

Odessa, Oftal'mologicheskiy Zhurnal, No 3, 1972, pp 226-229

Abstract: The pathogenesis of microwave cataracts caused by exposure to waves of moderate intensity (wave length 12.6 cm., frequency 2375 mgj) was studied in rabbits. Moderate doses were found to be harmful to the crystalline lens, causing the development of microwave cataracts (immediately in the younger rabbits, in 3-5 days in adult rabbits), localized in the posterior cortical layers near the horizontal commissure, having circular or crescent, lace-like aspect, and capable of regression, beginning 20-25 days after onset. Biochemical investigation established that the appearance of microwave cataracts is preceded by a lowering of the ascorbic acid level, a decrease in the number of sulfhydryl groups and in the soluble proteins in the lens, all noted as parallel developments. Reversibility of microwave cataracts, observed during light transmission and biomicroscopic investigation, was confirmed by

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USSR

GRECHUSHKINA, V. A., Oftal'mologicheskiy Zhurnal, No 3, 1972, pp 226-229

morphological and chemical methods. Development of microwave cataracts, caused by doses of moderate intensity, in the absence of a significant thermal factor, as well as the reversibility of opacity in the lens, suggests that the specific action of microwaves plays a role in the cataract-forming mechanism.

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1/2 042 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--BEHAVIOR OF MICROCOMPONENTS OF THE MINERAL PART OF COALS DURING  
COMBUSTION -U-  
AUTHOR--GREKHOV, I.T., SHPIRT, M.YA., VOLODARSKIY, I.KH.  
COUNTRY OF INFO--USSR G  
SOURCE--KHIM. TVERD. TOPL. 1970, (1), 157-9  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PROPULSION AND FUELS  
  
TOPIC TAGS--COAL, COMBUSTION R AND D, COMBUSTION PRODUCT, CHEMICAL  
COMPOSITION, SILICON OXIDE, SODIUM CARBONATE, CALCIUM OXIDE, GERMANIUM  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1990/2032 STEP NO--UR/0467/70/000/001/0157/0159  
  
CIRC ACCESSION NO--AP0109964  
ZZZZZZZZZZZZ UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STATISTICAL ANAL. OF EXPTL. DATA DISCLOSED THAT THE ASH CONTENT A IN BROWN COALS IN THE RANGE 8.2-28.6PERCENT HAD NO EFFECT ON THE DISTRIBUTION OF GE BETWEEN THE SLAG AND THE VOLATILE ASH OR ON THE RATIO K OF THE GE CONCN. IN THE SLAG TO THE CONCN. IN THE INITIAL ASH, WHEN COAL WAS BURNED IN OVENS FOR THE POWDER LIKE FUEL. IN THE STATIONARY BED FLAME OVENS K WAS INDEPENDENT OF A FOR A LESS THAN 32PERCENT; WITH A GREATER THAN 32PERCENT, K INCREASED. A PILOT FLAME OVEN FOR THE EXPTS. IN THE STATIONARY FUEL BED WAS USED. THE SCHEME AND THE OVEN ARE DESCRIBED. WITH INCREASING CONTENTS OF CAO AND SIO IN THE INITIAL ASH AS WELL AS WITH ADDNS. OF NA CL, NA SUB2 CO SUB3, AND MGCO SUB3 K INCREASED.

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UNCLASSIFIED

USSR

UDC: 621.382.333.33

GREKHOV, I. V., KOSSHINA, L. S., LEBEDEV, A. A.

"Cutout Process of a PNP Structure at High Levels of Injection in the Base Layers"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 851-855

Abstract: The paper deals with the process of cutout of a PNP structure under the effect of inverse anode voltage when the injection level is high in both bases. The shape of the current and the voltage across the PNP structure is analyzed for the case where the space charge region during cutout is initially formed near the high-voltage emitter junction. The time for recovery of the blocking capacity of the low-voltage emitter junction is calculated as well as the cutout time constant when the position of the boundary of the space charge region of the P-emitter is fixed. The authors thank A. I. Uvarov for discussion and remarks.

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- 206 -

1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--GROWTH OF THE NUMBER OF SWITCHED ON MICROPLASMAS IN SILICON  
AVALANCHE DIODES -U-  
AUTHOR--GREKHOV, I.V., SEREZHKIN, YU.N.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 611-13  
DATE PUBLISHED-----70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS  
TOPIC TAGS--AVALANCHE DIODE, SILICON DIODE, SOLID STATE PHYSICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/0251 STEP NO--UR/0449/70/004/001/0611/0614  
CIRC ACCESSION NO--A90105325  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105325

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICRODIODES 0.8 MM IN DIAM. WERE PREPD. FROM PULLED AND FROM FLOATING ZONE REFINED AL DOPED SI WITH 5 TIMES 10 PRIME3 AND 4 TIMES 10 PRIME5 DISLOCATIONS-CM PRIME2, RESP. THE DEPTH OF THE P N JUNCTION WAS SIMILAR TO 80 MU. THE GROWTH OF THE NO., N, OF MICROPLASMAS WITH INCREASING VOLTAGE, V, FOLLOWED AN EXPONENTIAL LAW:  $N \text{ EQUALS } \exp(\alpha(V \text{ MINUS } V_{\text{SUBO}}))$ , WHERE  $V_{\text{SUBO}}$  IS THE BREAKDOWN VOLTAGE OF THE 1ST MICROPLASMA, AND  $\alpha$  IS A DIODE CONST. FOR N SMALLER THAN OR EQUAL TO 20, A DEVIATION FROM THIS LAW WAS OBSD.

UNCLASSIFIED

USSR

UDC 539.374

GREKHOV, V. A., MANZHELEY, V. I., MITROFANOV, V. V., NIKOLAYEV, V. P.,  
TITOVA, N. S., SHOYKHET, G. Ya.

"Experimental Study of the Strength of Thin-Walled Rectangular Tube Under  
Cyclic Axial Loading in the Elastic-Plastic Region"

V sb. Dinamika splosh. sredy. Vyp. 8 (Dynamics of a Continuous Medium.  
No. 8 -- Collection of Works), Novosibirsk, 1971, pp 144-151 (from RZh-  
Mekhanika, No 8, Aug 72, Abstract No 8V361)

Translation: The strength of a tube with a transverse cross section in the  
form of a rectangular trapezoid welded at the ends to fixed rigid parts  
under a cyclic temperature effect was studied. Experiments were made on  
the object itself and on models, reduced tubes of rectangular cross section.  
The tube was subjected to a variable load and cooling up to given tempera-  
tures. The models were deformed without changing the temperature, com-  
pression was achieved up to a given deformation, and stretching was achieved  
up to a given value of the axial force. The material for the tube and the  
models was Kh18N10T steel. Test results based on 100 cycles are discussed.  
Stability losses in the walls and limited growth of deformation under the  
first cycles are noted. The test ended with the formation of cracks in some  
cases. D. A. Gokhfel'd.

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Photoelectric Effect

1

USSR

UDC 535.215.1

ALEKSANDROV, S. B., BELKIND, A. I., ALEKSANDROV, V. V., ~~GREKHON~~,  
~~V. V.~~ NEYSHLOS, YA. D.

"Photoelectric Emission From Tetracene. Effect of the Condition of the Surface and of Brightening"

V sb. Poluprovodniki i ikh primeneniye v elektrotekhn (Semiconductors and Their Application to Electrical Engineering--Collection of Works), No 5, Riga, "Zinatne," 1971, pp 231-249 (from Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2419)

Translation: Various mechanisms are considered of photoelectric emission from tetracene: photoionization of defects of trapped electrons, ionization of such defects by excitons and photoionization of molecules of the basic substance. An analysis is conducted of the effect of a bend /zagib/ of the energy bands (BEB) on photoelectric emission: on the spectral dependence of the current yield, the distribution of the electrons with respect to energy, the photoelectric work function, and others. The parameters of the BEB are obtained. The photoelectric work function of the

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USSR

ALEKSANDROV, S. E., et al. V sb. Poluprovodniki i ikh primeneniye v elektrotekhn, No 5, Riga, "Zinatne," 1971, pp 231-249

tetracene (allowing for BEB) equals 5.40 plus or minus 0.05 ev. The effect is investigated of the brightening in a singlet absorption band on photoelectric emission from tetracene. 11 ill. 43 ref.

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- 70 -

GREKOV, A. G.

RUSSIAN BOOK LIST

410

SEPTEMBER  
No. 9

1973

GREKOV, A. G., et al.

NOT V stroitel'sko-montazhnom upravlenii  
(Scientific Organization of Labor in the  
Construction and Installation Administration).  
Kiev. Budvel'nuk. 1973. 180 pp. 73.

Prepared by the Staff of  
INR/P

Acc. Nr.

AP0053440

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

5170 4R 0366

110522r Structure and reactivity of hydrazine derivatives.  
XXII. Kinetics of reactions of ethyl chloroformate with some  
nucleophilic reagents. Grekov, A. P.; Veselov, V. Ya. (Inst.  
Khim. Vysokomol. Soedin., Kiev, USSR). Zh. Org. Khim.  
1970, 6(2), 201-6 (Russ). The reaction rates (in the 25-55°  
range), activation energies, Arrhenius frequency factors, and  
entropies were detd. for the reaction of  $\text{ClCO}_2\text{Et}$  with  $\text{H}_2\text{NR}$  (R  
is Ph,  $\text{PhNH}$ ,  $\text{PhNMe}$ ,  $\text{PhO}_2\text{CNH}$ ,  $\text{BzNH}$ ,  $\text{BzNMe}$ ,  $\text{PhCSNH}$ ,  
or  $\text{PhCSNMe}$ ), which gives  $\text{RNHCO}_2\text{Et}$ . The high reactivity  
of the hydrazine derivs. is due to their intermol. H bonding and  
the formation of cyclic transition complexes with  $\text{ClCO}_2\text{Et}$ .  
These complexes cannot be formed by  $\alpha,\alpha$ -disubstituted hydra-  
zines which thus have lower reactivity in respect to  $\text{ClCO}_2\text{Et}$ .

CPJR

REEL/FRAME  
19830465

7

Acc. Nr:

AP0053452

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

480366

110521q Structure and reactivity of hydrazine derivatives.  
XXIII. Amide catalysis in reactions of benzohydrazide with  
2,4-dinitrophenyl acetate in benzene solution. Grekov, A. P.;  
Shandruk, M. I. (Inst. Khim. Vysokomol. Soedin., Kiev,  
USSR). *Zh. Org. Khim.* 1970, 6(2), 206-9 (Russ). The kinetics  
were studied of the reaction of  $\text{AcO}_2\text{C}_6\text{H}_3(\text{NO}_2)_2$  with  $\text{BzNHNH}_2$   
in benzene soln. or in benzene soln. contg.  $\text{BzNH}_2$ ,  $\text{AcNH}_2$ ,  
 $\text{PO}(\text{NMe}_2)_3$ ,  $4\text{-MeOC}_6\text{H}_4\text{CONH}_2$ ,  $\text{BzNHPh}$ ,  $\text{BzNHC}_6\text{H}_4\text{NO}_2$ ,  $4$ ,  
 $\text{PhSO}_2\text{NH}_2$ , caprolactam,  $2\text{-MeOC}_6\text{H}_4\text{SO}_2\text{NMe}_2$ , 2,5-diethyl-  
1,3,4-oxadiazole,  $2\text{-MeOC}_6\text{H}_4\text{CONMe}_2$ ,  $\text{AcNMe}_2$ ,  $\text{AcNEt}_3$ ,  $\text{PhCS-}$   
 $\text{NH}_2$ , pyridine *N*-oxide, or pyridine as catalysts. These amides  
accelerate the above reaction by forming complexes such as  
 $\text{BzN}[\text{H} \cdots \text{O}^- \text{C}^+ \text{Ph}(\text{NH}_2)]\text{NH}_2 \cdots \text{AcOC}_6\text{H}_3(\text{NO}_2)_2$ , which then  
break up to give  $\text{BzNHNHAc}$ ,  $2,4\text{-(O}_2\text{N)}_2\text{C}_6\text{H}_4\text{OH}$ , and the  
amide. CPJR

REEL/FRAME  
19830477

Acc. Nr:

AP0041859

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4/70

UR 0.366

89456k Structure and reactivity of hydrazine derivatives. XXI. Kinetics of the alkaline hydrolysis of carboxylic acid hydrazides. Grekov, A. P.; Shevchenko-Korzhenetskaya, I. K.; Malyutenko, S. A.; Mavrenik, O. V. (Inst. Khim. Vyso-komol. Soedin., Kiev, USSR). Zh. Org. Khim. 1970, 6(1), 98-101 (Russ). The reaction rates, activation energies, Arrhenius frequency factors, and reaction enthalpies were detd. of alk. RCONHNH<sub>2</sub> (I), R = Ph, *p*-MeC<sub>6</sub>H<sub>4</sub>, *p*-MeOC<sub>6</sub>H<sub>4</sub>, Pr, Me, or MeOCH<sub>2</sub>) hydrolysis at 25, 40, or 60°. The ionization of I increases very rapidly with the concn. of alk. solns.; in 5% KOH, 90% I is ionized. The ionization hinders the attack of OH<sup>-</sup> on the CO group of I. Thus, the hydrolysis rate decreases with an increase in the alk. soln. concn. Electron-donating substituents of R also hinder the attack of OH<sup>-</sup>, but they also decrease the ionization of I. Therefore, the effect of R structure on the kinetics of I hydrolysis is only slight. CPJR

REEL/FRA  
19751740

7

Acc. Nr:

AP0041858

Abstracting Service:

CHEMICAL ABST

4/70

Ref. Code:

UR 0366

[ 89455] Structure and reactivity of hydrazine derivatives.  
XX. Kinetics of the acid hydrolysis of carboxylic acid hydrazides. Grekov, A. P.; Mavrenik, O. V.; Malvutenko, S. A. (Inst. Khim. Vysokomol. Soedin., Kiev, USSR). Zh. Org. Khim. 1970, 6(1), 94-7 (Russ). The reaction rates, equil. consts., activation energies, and Arrhenius frequency factors were detd. for  $RCONHNH_2$  ( $R = Me, Pr, MeOCH_2, PhOCH_2, Ph, p-MeC_6H_4, p-MeC_6H_4, m-ClC_6H_4, p-Me_2NC_6H_4, m-O_2NC_6H_4, \text{ or } p-O_2NC_6H_4$ ) hydrolysis at 70 or 80° in 1 to 5M  $H_2SO_4$  solns. The structure of R has only a minor effect on the hydrolysis kinetics due to a nearly simultaneous protonization and  $(H_3O)^+$  addn. reaction.

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REEL/FRAME  
19751739

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USSR

Infrared Rays

UDC: 621.382.2

GREKHOV, I. V., LEVINSHTEYN, M. Ye., L'VOVA, T. V., OTBLESK, A. Ye.  
and SERBIN, A. I., A. F. Ioffe Physico-Technical Institute, Lenin-  
grad

"Silicon Injection Modulator of Infrared Radiation"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp  
1327-1334

Abstract: This paper describes experiments for investigating silicon injection modulators and discusses methods for computing injection modulators operating in the pulse mode. The experimental equipment uses a CO<sub>2</sub> laser of the OKG-15 type, with a wavelength of 10.6  $\mu$ , the beam incident on the face of the silicon specimen. The transmitted beam falls on a photosensitive device, and the signal from the latter is applied to a microvoltmeter of the V6-2 type, in the d-c mode, or to a pulse amplifier and thence to an oscillograph, in the pulse mode. Rectangular pulses are applied to the specimen. A block diagram of the apparatus and an explanation of the experimental procedures are given. Curves are plotted for the modulation coefficient as a function of the d-c current density in different types of specimens under various conditions,  
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USSR

UDC: 621.382.2

GREKHOV, I. V., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1327-1334

the coefficient being calculated from the formula  $K = (I_0 - I_J)/I_0$ , where  $I_0$  is the signal recorded by the microvoltmeter with no current, and  $I_J$  is the signal for a specified current density. It is found that the rate of growth of the coefficient with time is not determined by the reactances in the circuit but by the modulation of the resistance in the diode specimen base through the injected carriers. In the theory section of this paper, the results of the experiments are discussed on the basis of a model according to which the current through the diode remains constant during the time of the pulse.

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USSR

UDC 547.234.1 + 547.241

SHANDRUK, M. I., YANCHUK, N. I., and GREKOV, A. P., Institute of the Chemistry of High Molecular Compounds, Academy of Sciences, Ukrainian SSR

"Hydrazides of the Phosphinic and Phosphoric Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2194-2198

Abstract: New phosphoric acid hydrazides have been obtained by the reaction of hydrazine hydrate and ethylhydrazine with diarylphosphinic, 0,0-diarylphosphoric and 0,0-diarylthiophosphoric acid chlorides. The reaction of phosphoric acid chlorides with ethylhydrazine, the reagents taken at a 1:2 molar ratio, occurs in benzene attacking the  $\alpha$ -nitrogen atom, with the formation of  $\alpha$ -ethyl substituted hydrazides.

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USSR

UDC 547.234.1 + 547.241 + 541.127

SHANDRUK, M. I., YANCHUK, N. I., and GREKOV, A. P., Institute of the Chemistry of High Molecular Compounds, Academy of Sciences, Ukrainian SSR

"The Structure and Reactivity of Hydrazine Derivatives. XXXII. Reaction Kinetics of Diarylphosphinic Acid Hydrazides With Picryl Chlorides in Benzene"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2198-2202

Abstract: The reaction kinetics of diarylphosphinic acid hydrazides with picryl chloride in benzene has been investigated at various temperatures. The reactions are quantitative and are described by a second order equation; energy parameters for these reactions have been calculated. The effect of the substituents in a molecule of diphenylphosphinic acid hydrazide on its reactivity can be described by Hammett's equation using the  $\sigma_p$  constants. The constants of the acid ( $pK_{a2}$ ) and base ( $pK_{a1}$ ) ionizations have been determined. Band vibration frequencies for NH and P=O groups have been determined.

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USSR

UDC 621.348.629.113.004.15 <sup>1</sup>

KOSSOV, M. A., Candidate of Technical Sciences, BOKAREVA, A. A., ZVEZDINA, N. S., GREKOV, L. I., SEDINA, G. I., NAMI (Central Scientific Research Institute of Motor Vehicles and Motor-Vehicle Engines)

“The Technical and Economic Effectiveness of Using Gas-Turbine Engines on Trucks Under the Conditions of the North”

Moscow, Avtomobil'naya Promyshlennost', No. 7, 1971, pp 5-10

Abstract: For a piston engine in operation, the problem of change of the parameters of the characteristics with a drop in the air temperature is not as acute as for a gas-turbine engine. However, the starting of a piston engine, particularly of a diesel engine, under low air-temperature conditions is considerably more difficult. It is economically advantageous to use gas-turbine motor-vehicle engines in the northern regions when the maximum cost of these engines is up to 20 rubles per horsepower for engines with a capacity of 1200 horsepower, up to 22 rubles per horsepower for a capacity of 660-720 horsepower, and up to 18 rubles per horsepower for an engine capacity of 240 horsepower. These costs are actual costs, and can be obtained

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USSR

KOSSOV, M. A., et al., Avtomobil'naya Promyshlennost', No 7, 1971, pp 5-10

in the series production of gas-turbine engines of the types under consideration. The possibility of obtaining large savings in the national economy is an objective prerequisite for the creation of modern and promising gas-turbine engines with a capacity of 1500-1200, 900-600, and 250-400 horsepower with a specific fuel consumption of 0.170-0.210 kg per horsepower, and the preparation of their series production and operation first of all in the northern and northwestern regions of the USSR.

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Steels

USSR

UDC 669.15-194.56.018.2

GREKOV, N. A., SILINA, YE. P., and a SURKOVA, A. P., Leningrad

"Structure and Properties of Explosive-Hardened Austenitic Steels"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan/Feb 74, pp 112-114

Abstract: The mechanical properties and fine structure changes were studied for two austenitic steels (60Kh3G8N8V and 4-Kh3G18) which had been plastically deformed by low-pressure shock waves. The first steel is very stable with a martensite transformation point below  $-196^{\circ}\text{C}$  while the other steel is less stable ( $M_s$  near  $-120^{\circ}\text{C}$ ) especially during plastic deformation. It was noted that the sequence of transformation stages ( $\gamma \rightarrow \epsilon$  and  $\epsilon \rightarrow \alpha$ ) is preserved during high-speed shock-wave deformation. In the steel with high austenite stability the  $\epsilon$ -martensite transformation and twinning start only after a high-density dislocation matrix is formed. The degree of improvement of a cellular dislocation structure is better the more stable the austenite. For a lower stability the tendency of steel toward deformation hardening from shock waves increases which can be associated with intensive occurrence of  $\gamma \rightarrow \epsilon$  transformation and twinning processes. Three figure, one table, one bibliographic references.

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USSR

UDC 669.295.5:539.376

AGEYEV, N. V., PETROVA, L. A., GREKOV, N. A., GRANKOVA, L. P.,  
KOZLOVSKAYA, T. M., and ARKOVENKO, G. I., Moscow

"Creep of IVT-1, a  $\beta$ -Alloy of Titanium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 163-167

Abstract: The creep of IVT-1, a  $\beta$ -alloy of titanium (7% Mo, 5.5% Cr, 3% Fe, 3% Al, remainder Ti) was determined at temperatures of 100, 200, 250, and 350°C at stresses of 120, 115, 110, 90, 80, and 75 kg/mm<sup>2</sup> over 1,000 hours and in some cases up to 2,500 hours. The limiting stress causing 0.02% residual deformation of the alloy after 1,000 hours is 105 kg/mm<sup>2</sup> at 200°C and 79 kg/mm<sup>2</sup> at 250°C. The rate of stable creep at these stresses and temperatures is  $2 \cdot 10^{-5}$ %/hr. The creep tests showed that if two specimens tested under identical conditions show different initial deformation, the specimen with greater initial deformation generally has lower creep than the specimen with less initial deformation. Total deformation increases little with increasing load time at 100-250°C and 120-75 kg/mm<sup>2</sup>. Following creep tests, some breakup of  $\beta$  phase grains is observed; migration of grain boundaries and displacement along grain axes (slipping) were noted.

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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--CALCIUM CHROMATE PRODUCTION -U-  
AUTHOR--(05)-TEPLYAKOV, B.V., DUBROVIN, A.S., SLEPOVA, L.V., GREKOV, S.D.,  
KUZNETSON, V.L.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 264,379  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)  
DATE PUBLISHED--03MAR70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CALCIUM COMPOUND, CHROMATE, CHEMICAL PATENT, CHEMICAL  
PRODUCTION, METALLURGIC RESEARCH FACILITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1449 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0126980  
UNCLASSIFIED



2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AA0126980  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CA CHROMATE IS PREPD. BY 1ST  
PURIFYING A SOLN. OF NA DICHROMATE WITH CACRO SUB4, CACL SUB2, OR THEIR  
MIXT. IN A QUANTITY 100-200PERCENT OF THAT THEORETICALLY NECESSARY TO  
PPT. CASO SUB4. THE SOLN. OF NA DICHROMATE AFTER SEPN. OF THE PPTD.  
CASO SUB4 IS ACIDIFIED WITH CRO SUB3 OR HCL UNTIL THE SOLN. PH IS  
0.0-1.0. THE FILTRATE IS TREATED 1ST BY HEATING WITH MILK OF LIME UNTIL  
65-80PERCENT PPTN. OF CACRO SUB4, AND AFTER SEPN. OF THE CACRO SUB4  
PPT., WITH CACL SUB2. FACILITY: CHELYABINSKIY  
NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT METALLURGII.

UNCLASSIFIED

USSR

UDC 669.183.218.5

GREKOV, YE. A.

"Yield of Metal and the Balance of Iron in Open-Hearth Furnaces"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75, Metallurgiya Press, 1970, pp 77-84

Translation: The influence of reloading of furnaces and methods of their intensification on consumption of charge metal during the production of steel is studied. Data are presented on the production of usable ingots and iron in open-hearth furnaces operating with input of oxygen only to the surface and with blowing. The negative influence of furnace recharging on metal production is indicated. The quantitative relationship of the production of steel with the quality of scrap used is established.

Iron losses during steel production amount to 82-106 kg/T ingots and can be decreased by a staged blowing mode during operation of the furnace with a melt weight which is optimal for each given level of intensification.

1/1

USSR

UDC 669.183.218.5

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Iron losses during steel production amount to 82-106 kg/T ingots and can be decreased by a staged blowing mode during operation of the furnace with a melt weight which is optimal for each given level of intensification.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CHARACTERISTICS OF PROTEUS VULGARIS ISOLATED FROM THE PATIENTS WITH  
ACUTE DISTURBANCES OF THE GASTROINTESTINAL TRACT -U-  
AUTHOR--GREKOVA, G.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,  
PP 50-54  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, BACTERIOLOGY, ESCHERICHIA COLI,  
AGGLUTININ, SEROLOGIC TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0414

STEP NO--UR/0016/70/000/006/0050/0054

CIRC ACCESSION NO--AP0126167

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126167

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF 104 STRAINS OF PROTEUS VULGARIS WHICH WERE ISOLATED AS A PURE CULTURE AND ALSO SIMULTANEOUSLY WITH E. COLI AND ENTEROCOCCUS FROM PATIENTS WITH ACUTE GASTROINTESTINAL DISTURBANCES. THE INCIDENCE OF PATHOGENIC PROTEUS VULGARIS IN THE FECAL CULTURES OF THESE PATIENTS CONSTITUTED 11.2PERCENT; THIS INCIDENCE WAS DOUBLE IN CHILDREN IN COMPARISON WITH ADULTS. THE STRAINS OF PROTEUS VULGARIS ISOLATED PROVED TO BE PATHOGENIC IN EXPERIMENTS ON LABORATORY ANIMALS, PARTICULARLY IN ASSOCIATION WITH E. COLI. THE TITRE OF SERUM AGGLUTININS AGAINST PROTEUS INCREASED IN THE PATIENTS FROM THE 9TH TO THE 15TH DAY OF THE DISEASE. FACILITY: IVANO-FRANKOVSKIY MEDITSINSKIY INSTITUT.

UNCLASSIFIED

USSR

UDC 616.931.42-092.9-07:[616.36+616.411]-009.931:577.153.3

GREKOVA, N. A., Institute of Epidemiology and Microbiology imeni Gamaleya,  
Academy of Medical Sciences USSR, Moscow

"A Study of Acid Phosphatase Activity in the Liver and Spleen Cells of Guinea Pigs in the Presence of Multiple Brucellosis Infection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973,  
p 136

Abstract: Acid phosphatase levels were traced in liver and spleen cells of guinea pigs receiving a subcutaneous injection of Br. melitensis and 5 reinfections beginning 6 months later. Initially most enzyme was in spleen neutrophils and macrophages, and diffusely as granules in liver cells. The first Br. melitensis injection dropped spleen phosphatase activity by three times and halved its activity in liver cells by the first day. While activity in the liver rose and exceeded the norm from the 15th day to 6 months, splenic activity did not return to normal until 6 months. Reinfection caused splenic activity to rise sharply above normal by the 30th day, but activity subsequently decreased until it was half normal 6 months after reinfection. Liver activity rose immediately after each of the first three reinfections and dropped between them, but after subsequent reinfections it remained high. After reinfection the concentration of diffuse enzyme increased in the cytoplasm of both types of cells.

1/1

- 17 -

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USSR

UDC 619: 576.851.42

KAYTMAZOVA, YE. I., KURDINA, D. S., DRANOVSKAYA, YE. A., GREKOVA, N. A.,  
Institute of Epidemiology and Microbiology imeni K. F. Gamaleya, and  
SAKHNOVSKIY, YU. G., State Scientific Control Institute of Veterinary Prepara-  
tions

"Characteristics of Brucella ovis cultures"

Moscow, Veterinariya, No 10, 1971, pp 44-46

Abstract: Comparative study of several Brucella ovis strains isolated from sick animals in the Soviet Union (Novgorod and Pskov oblasts) showed that they are identical in morphological and biological properties to cultures isolated in Australia, New Zealand, Argentina, and Bulgaria. All strains were similar in differential properties (high carbon dioxide requirement for growth, resistance to brucellosis T6 phage, oxidative metabolism) to Brucella melitensis. Infection of guinea pigs with these strains showed that they are low in virulence (only a dose of  $2 \cdot 10^9$  microbial cells induced disease). Histological examination revealed intensified lymphopoiesis and hyperplasia of reticular cells in the lymph nodes and spleen and the appearance of lymphoid nodules in the lungs. All the strains studied attacked the testes, impairing spermatogenesis.

1/1

- 17 -

Acc. Nr:

AP0034097

Abstracting Service:  
CHEMICAL ABST. 4-70

Ref. Code:

MR 0078

71301w Use of electrodialysis with anion exchange membranes for studying the state of boron in solutions. ~~Grishinich~~  
A. L. ~~Matveya~~, E. A. (USSR). Zh. Neorg. Khim. 1976, ~~15(1), 182-5 (Russ.)~~. The compn. of ionic forms of borate in soln. was detd. by using electrodialysis with anion-exchange (MA-40) membrane. Study of  $H_2BO_3$ -lactic acid (HLact) or  $H_2BO_3$ -oxalic acid ( $H_2Ox$ ) systems proved the presence of  $[BO_2-2HLact]^-$ ,  $[BO_2.HLact]^-$ , and  $[BO_2.H_2Ox]^-$ . HMJR 1

REEL/FRAME

13710740



USSR

UDC 536.46:533.6

GREMYACHKIN, V. M., ISTRATOV, A. G.

"On the Stability of a Plane Flame in a Flow With a Velocity Gradient"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 305-308 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B958)

Translation: The problem of the plane front of a flame under conditions when the velocity component of the flow tangential to the front rises linearly along the front considering the differences in the diffusion coefficients  $D$  and the temperature conductivity  $\kappa$  is discussed. The stability of the stationary reactions to curvature of the front is investigated. It is shown that for  $D < \kappa$  extinguishing of the flame is possible for an increase in the gradient of the tangential flow velocity and for  $D > \kappa$  the instability of the front toward the curvature is shown.

1/1

- 44 -

1/2 029  
UNCLASSIFIED  
PROCESSING DATE--09OCT70  
TITLE--SIMPLE MYSERIES OF CREATION THE BOLD RESEARCH OF MOSCOW STUDENTS  
-U-  
AUTHOR--GREMYATSKIY, A. G  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, TEKHNIKA MOLODEZHI, NO 3, 1970, PP 12-13  
DATE PUBLISHED-----70  
SUBJECT AREAS--AERONAUTICS  
TOPIC TAGS--AIRCRAFT FLIGHT TEST, GLIDER, AVIATION INSTITUTE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1993/1763 STEP NO--UR/0029/70/000/003/0012/0013  
CIRC ACCESSION NO--AP0114262  
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--0900170

CIRC ACCESSION NO--AP0114262

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GROUP OF STUDENTS AT THE MOSCOW  
AVIATION INSTITUTE HAVE DESIGNED AND HAVE STARTED FLIGHT TESTING A  
CIRCULAR WING GLIDER.

FACILITY: MOSCOW AVIATION INSTITUTE.

UNCLASSIFIED

89

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ALKOXY COMPOUNDS. XLII. REACTION OF SODIUM ALKYL MALONIC ESTERS WITH  
ALPHA CHLOROBUTYL METHYL ETHER AND SOME REACTIONS OF ALKYLALPHA  
AUTHOR--(04)--CHUMACHENKO, T.K., KAMALOV, G.L., BOGATSKIY, A.V., GREN, A.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 846-54  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MALONIC ESTER, ORGANOSODIUM COMPOUND, CHLORINATED ORGANIC  
COMPOUND, METHYL ETHER, ALCOHOL, IR SPECTRUM, HYDROGEN BONDING,  
HYDROLYSIS, CHEMICAL REDUCTION, METHOXY COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1484 STEP NO--UR/0079/70/040/004/0846/0854  
CIRC ACCESSION NO--AP0135148  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135148

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. REACTION OF SODIO MALONIC ESTERS WITH PRCHCLOME GAVE (SHOWN ON MICROFICHE). SAPON. WITH AQ. ALC. KOH GAVE MIXTS. OF MONO ET ESTERS AND FREE ACIDS, WITH THE LATTER PREDOMINANT FOR THE ME MEMBER ONLY; THE FOLLOWING PRCH(OME)CR(CO SUB2 H) SUB2 WERE REPORTED: ME, M. 102DEGREES; ET, M. 129DEGREES; AND PR, M. 156DEGREES. THE ABOVE DI-ET ESTERS WERE HEATED 8 HR WITH 30PERCENT ALC. KOH GAVE MIXTS. OF ET ESTERS OF THE INDICATED CARBOXYLIC ACIDS IN WHICH THE RELATIVE AMTS. OF THE UNSATD. MEMBERS TENDED TO INCREASE WITH THE MOL. WT. OF THE ACIDS; CAREFUL FRACTIONATION YIELDED THE PURE COMPONENTS: (SHOWN ON MICROFICHE). VAPOR PHASE HYDROLYSIS OF THE ESTERS OVER AL SUB2 O SUB3 GAVE FREE PRCO SUB2 H, C SUB5 H SUB11 CO SUB2 H, ETMECHCO SUB2 H, AND THEIR ET ESTERS FROM THE SUBSTITUTED MALONATES, AND THE PROCESS RUN IN THE 250-370DEGREES INTERVAL ALSO GAVE MIXTS. OF UNSATD. AND ALKOXYLATED ACIDS AND ET ESTERS. REDN. OF THE MALONATES WITH LIALH SUB4 GAVGAVE (SHOWN ON MICROFICHE). THE ESTD. VALUES OF LENGTHS OF H BONDS IN THESE DIOLS WERE TABULATED FROM IR MEASUREMENTS; THE ENERGY OF THE INTRAMOL. BOND WAS ESTD. AT 3.5-4 KCAL PER MOLE AND THAT OF THE INTERMOL. BOND 8 KCAL PER MOLE IN THESE DIOLS.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ALKOXY COMPOUNDS. 30. ADDITION OF MONOCHLOROMETHYL METHYL ETHER TO  
ALLYL, ALPHA, ALKOXYETHYLMALONIC ESTERS AND  
AUTHOR-(02)-BOGATSKIY, A.V., GREN, A.I.  
COUNTRY OF INFO--USSR  
SOURCE--URK. KHIM. ZH. 1970, 36(2), 186-90  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALKOXIDE, MALONIC ESTER, DIOXANE, ETHER, HETEROCYCLIC OXYGEN  
COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--2000/1973 STEP NO--UR/0073/70/036/002/0186/0190  
CIRC ACCESSION NO--AP0125562  
UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0125562  
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. (CF. CA 68: 12915U). CH  
SUB2:CHCH SUB2 C(CHMEGR)(CO SUB2 ET) SUB2 AND MEOCH SUB2 CL IN THE  
PRESENCE OF ZNCL SUB2 FORMED THE FOLLOWING (SHOWN ON MICROFICHE). ALL  
OF THE ADDNS. ARE IN THE MARKOVNIKOV SENSE. FACILITY: ODESS.  
GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

UDC: 543.544.12-577.159.2

ROZENTAL', G. F., and GRECH, E. Ya., Institute of Organic Synthesis, Academy of Sciences, Latvian SSR, Order of the Red Banner of Labor

"Purification of Snake Venom Phosphodiesterase from Contaminating Endonucleases"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, Seriya Khimicheskaya, No 9, 70, pp 623-626

Abstract: A method for determining endonucleases in the presence of large amounts of exonucleases was described. The method was based on gel filtration of partially digested high molecular RNA by a mixture of nucleases. Purification of *Vipera lebetina* venom on sulfathylcellulose had shown that along with the separation of venom phosphodiesterase from 5'-nucleotidase, phosphodiesterase was also purified from endonucleases (1000-fold). In the process of experimentation for obtaining a phosphodiesterase containing minimal amounts of accompanying nucleolytic activities, attempts were also made with chromatography of viper venom on seradex G-100, M1-cellulose and M4M-cellulose. Data showed their effectiveness also for the venom of other snakes as well as for studying the structure of polynucleotides and nucleic acids.

1/1



USSR

UDC 547.26'118

KADYROVA, V. KH., KIRPUCHNIKOV, P. A., MUKMENEVA, N. A., GREEN, G. P., and  
KOLYUBAKINA, N. S., Kazan' Institute of Chemical Technology imeni S. M.  
Kirov

"New Thermostable Phosphite Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1688-1691

Abstract: A study of the synthesis of phosphite esters possessing increased hydrolytic and thermal stability showed that such phosphites can be obtained by condensation of various bisphenols with trivalent phosphorus derivatives. The thermostability of the synthesized compounds was studied by the differential thermal analysis method using a derivatograph of the F. PAULIK-J. PAULIK-L. ERDEY System. It was found that thermal decomposition begins only at temperatures above 300°.

1/1

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Acc. Nr: **AP0034222** Abstracting Service:  
CHEMICAL ABST. *f-70*

Ref. Code:  
**WR 0078**

71242c Complexing boric acid with anions of hydroxy acids in an ion-exchange phase. Grekovich, A. L.; Materova, E. A. (USSR). *Zh. Neorg. Khim.* 1976, 15(1), 187-90 (Russ). Effect of  $H_3BO_3$  concn. was studied on the reactions of  $H_3BO_3$  with anions of tartaric, citric, malonic, and lactic acids in ion-exchange reactions. Complex formation ability of polyol- $H_3BO_3$  systems decreased with the anion in the order: tartrate > citrate > malonate > lactate. Stability consts. of the corresponding complexes were 55.0, 21.2, 11.3, and 6.7, resp. HMJR

REEL/FRAME  
19710875

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--TWENTY FOUR HOUR'S CYCLE IN THE ADRENAL WORK IN HEALTHY TILL ONE  
YEAR OLD CHILDREN AND PATIENTS WITH INTESTINAL TOXICOSES -U-  
AUTHOR--GRES, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZDRAVCOKHRANENIYE BELORUSSII, 1970, NR 5, PP 36-39

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADRENAL GLAND, INTESTINAL DISEASE, THIN LAYER CHROMATOGRAPHY,  
CORTICOSTEROID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1467

STEP NO--UR/0477/70/000/005/0036/0039

CIRC ACCESSION NO--AP0125095

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125095

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXCRETION OF THE CORTICOSTEROIDS HAS BEEN DETECTED BY THE THIN LAYERED CHROMOGRAPHY METHOD ON SILICAGEL DURING 24 HOURS WITH THE URINE IN 30 TILL ONE YEAR OLD HEALTHY CHILDREN AND 26 CHILDREN OF VERY YOUNG AGE SUFFERING FROM INTESTINAL TUBICULOSIS. IT HAS BEEN FOUND THAT IN HEALTHY CHILDREN MAXIMUM GLUCOCORTICOID EXCRETION OCCURS DURING MATINAL HOURS. THE HIGHEST MINERALOCORTICOID ACTIVITY IS COME ACROSS AT NIGHT. THE TOXIC INTESTINAL SYNDROME DISTURBS THE RYTHMIC ADRENAL FUNCTION, COMPLETE RESTORATION OF THE LATTER BY THE TIME OF RECONVALESCENCE DOES NOT TAKE PLACE.  
FACILITY: GRODNENSKOGO MEDITSINSKOGO INSTITUT.

UNCLASSIFIED